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INSTALLMENT PAYMENT PROCESSING METHOD OF ELECTRONIC CASH REGISTER  
[Den'shi shiki kyasshurejisuta no bun'katsubarai shori houshiki]

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KYASSHUREJISUTA NO  
BUN'KATSUBARAI SHORI  
HOUSHIKI

## 1. Title of the Invention

Installment Payment Processing Method of Electronic Cash

Register

## 2. Claims

1) Installment payment processing method of electronic cash register characterized by: being equipped with a sale registration means, which calculates the sales amount per sale by means of a registration key input and which at the same time calculates and stores the total of said sales, a depositing means, which calculates and stores the total of the deposits by means of a cash key input, and an installment balancing means for storing the fact that one portion of the sale amount will be balanced in installments by an installment payment key input; and being arranged in a manner such that when the installment payment key is entered, the sale registration means performs only the calculation of the sales amount per sale based on the content stored in the installment balancing means and such that the content stored inside the installment balancing means is erased only by the operation of the depositing means that is based on the cash key input.

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\*Numbers in the margin indicate pagination of the foreign text.

### 3. Detailed Explanation of the Invention

#### [Industrial Field to Which the Invention Belongs]

The present invention pertains to electronic cash registers, specifically to cash registers utilized in restaurants and hotels and to electronic cash registers of a type capable of deferred payment balancing and installment balancing.

#### [Prior Art and Problems Thereof]

Electronic cash registers have become widely popular in recent years and they are indispensable in mass sales stores, etc. As their usages expand, it is desired for them to have various functions that suit the usages. On the other hand, from the perspective of account balancing in retail sales, business customs are changing as can be seen in the prevalence of credit cards, and it has become necessary for cash registers to be flexible so that they can cope with new modes of payment. For instance, the above described restaurants and hotels have their own customers in their business locations, and it is important to attempt to provide conveniences to these customers. In other words, it is necessary to promote the patronage of these customers by creating the convenience of deferred payments or installment payments of a part of a charge, not to mention payment with credit cards.

As electronic cash registers that can handle such demands, there have conventionally been those capable of deferred payment

balancing. It is arranged so that the cost at the time of a sale /570 is stored in a credit account storage area, and when there is a payment or deposit from the customer, the stored credit account of the customer is called out and balanced. In other words, this type of cash register is equipped with a verification key, which is for calling out the credit account. For instance, by entering the verification number of a customer to perform balancing and pressing this verification key, the amount of the credit account stored for each customer can be called out.

However, in the case of an installment in which a portion of the expense is paid or balanced at the time of or after the sale, the function to be equipped by the cash register becomes very complex. One reason for this is instances in which, for example, multiple customers dine together all at once or in which multiple regular customers are at one table in a restaurant. Although the credit account is stored for each table, it is not always clear which credit account belong to which specific customer. Under these conditions, balancing of each person's share or of partial amounts is carried out as required for each customer afterwards. In cases of such deferred payments and installments, problems may occur at a later date unless it is clear which sales items have been balanced and when. However, if all sale times, items, and prices are stored in a cash register to prepare for balancing at a later date, then naturally a large storage capacity becomes

necessary, and not only does the register become expensive but also the operation of the register becomes complex accordingly, which makes the occurrence of key operation errors likely. This defeats the purpose of making the register complex. Moreover, the program for the operation of the register also becomes complicated, the program storage area becomes large, and the number of operational steps is increased, as well. Therefore, it would take a long time for a small cash register to process data.

Due to such a background, although cash registers equipped with a deferred payment processing function have been conventionally known, registers having an installment payment processing function have not been actualized, except for cases in which a host computer is provided as a backup, and installment balancing had to be processed separately from the cash register.

#### [Purpose of the Invention]

Based on the above-described current situation, the purpose of the present invention is to develop installment payment processing methods of electronic cash registers in which the key operations are simple, in which there are few operation errors, and in which the number of operational steps for programs can be small.

#### [Essential Points of the Invention]

According to the present invention, this purpose is achieved while hardly complicating the register at all by means of the

following: Adding an installment balancing means, which stores the fact that a portion of the sale goes to installment by means of installment payment key input, to an electronic cash register equipped with at the least a sale registration means, which calculates the sales amount per sale by means of a registration key input and which at the same time calculates and stores the total of said sale, and a depositing means, which calculates and stores the total of the deposit by means of a cash key input; and structuring the relationships between said means in a manner such that when the installment payment key is entered, the sale registration means performs only the calculation of the sales amount per sale based on the content stored in the installment balancing means and such that the content stored inside the installment balancing means is erased only by the operation of the depositing means that is based on the cash key input.

In a cash register structured in this manner based on the method of the present invention, when balancing an installment, the verification key is pressed after keying in said verification number of the customer or table. Next, when the installment payment key is pressed, an installment balancing program is activated immediately, the amount of the credit account is called out from the credit account storage area and is displayed or printed, and at the same time, the sale registering program is put in an installment balancing mode. Then, installment

balancing can be performed by activating the sale registration means and depositing means by means of exactly the same key operation as that of regular sales, and therefore, key operation errors of the register rarely occur. At this time, the sale registration means only calculates the sales necessary for the balancing and does not add the balance to the sale total. Moreover, since the depositing means clears the installment balancing mode for the first time after normally adding the balance to the deposit total, there is no fear of totaling errors or of misuse for another payment.

/573

#### [Working Example of the Invention]

In the following, a working example of the present invention will be explained in detail by referring to drawings.

Figure 1 is a functional schematic diagram showing the principles of the method of the present invention. As shown in the figure, a cash register of the method of the present invention contains a sale registration means [1], depositing means [2], and installment balancing means [3], shown in the figures as functional blocks, and these means are electronic functioning means incorporated in the microcomputer shown in Fig. 3, for instance. Toward the top of the figure, there is a keyboard [30] having keys as the means for activating these means is shown, and it contains ten keys [K10] for inputting the sale quantity and sale unit price, a category key group as the

registration keys [KR] for activating the sale registration means, a cash key [KC] for activating the inputting means, an installment payment key [KD] for activating the installment balancing means, a deferred payment key [KP] for storing the credit accounts, and a verification key [KID] for identifying the customers. Moreover, toward the bottom of the figure, a RAM [15] for the storage device inside the above-described microcomputer [10] and a display/printing means [40] are shown. Inside the RAM [15], there are a registration area [RA] as a temporary storage area for sales, etc., a total area [TA] for storing the sums of sales, etc., and a credit area [PA] for storing credit amounts, etc. On the other hand, the display/printing means [40] contains a number display device [DISP] for displaying the sales amount, etc. of each sale and a printer [PRT] for printing and issuing receipts. The arrow of Fig. 1 indicated with a solid line indicates the route and direction of a command between the structural components, while the arrow indicated with dotted lines indicates the route and direction of the data of the quantity, amount, etc. The operations of the components inside this functional schematic diagram are described in detail later, and the relationships among the means, [1], [2], and [3], that are the main components of the present invention are symbolically indicated by means of the flags [F] stored inside the installment balancing means in this figure. In other words, when the

installment balancing means [3] is activated by means of the installment payment key [KD], said means assigns "1" to the flag [F], and thus generates an instruction to the sale registration means [1] to go into an installment balancing mode. The depositing means [2] clears the installment balancing mode by returning said flag to 0 at a point at which the depositing process is finished.

Figure 2 shows in a summarized manner the appearance of a cash register in which the method of the present invention is utilized. Said register is hardly different from a regular register in terms of its appearance except that just one installment payment key [KD] is provided on the keyboard [30]. As shown in the figure, in the cash register [50], a main unit case [52] is mounted and fixated on a cash receipt box [51] equipped with a drawer [51a] for inserting cash into and removing cash out of, and said case [52] is provided with an internally stored electronic device, the above-described display devices, such as a keyboard [30] equipped with a control key [31] and a number display device [DISP], and a printer [PRT]. Moreover, an external connecting means [53] for adding a printer, etc. as necessary is provided on the outside surface.

Figure 3 is an example that shows electronic devices for implementing the method of the present invention from the hardware perspective. The main means for implementing the

present invention are stored in the microcomputer device [10] shown on the left side of the chain line in the figure. As shown in the figure, inside the microcomputer [10], an 8085 series CPU [13], a ROM [14], and the above-described RAM [15], for example, are connected to an address bus [11] and a data bus [12], and both buses are connected to an input/output port [17] and an output port [18] via an address decoder [16], etc. The input/output port [17] is connected with a controller chip [21] that is commonly provided to the keyboard [30] and number display device [DISP] in this implementation and that is shown on the right side of the input/output port [17], and it receives key input signals from the keyboard [30] via an input filter [21a], transfers them to the computer [10], and at the same time, displays the data in digits specified by a digit driver [25] via a decoder [23] in response to an instruction from the computer [10] via a segment driver [24] by using prescribed characters. On the other hand, the output port [18] contains a serial interface and allows the printer [PRT] to print the specified data via a printer driver [26] by providing an instruction and the data to another controller chip [22] located to the right.

Figure 4 shows an example of the assignments between the storage areas inside the above-described RAM [15] for implementing the method of the present invention, and it is shown as three divisions, which are the registration area [RA], the

credit area [PA], and the total area [TA]. The registration area [RA] contains an area for the sales amount [S] per sale calculated inside the CPU [10] based on the quantity and unit price input from the ten keys [K10] of the keyboard [30], an area /572 for installment balancing amounts [D], and an area for storing the logical value of the above-described flag [F]. The credit account area [PA] consists of multiple areas for storing the credit amounts, [P1] - [Pm], to be paid later individually with respect to each customer or each of the table numbers, [1] - [m]. From these areas, writing and reading of the amount data is carried out by using the customer numbers as the verification address numbers, [1] - [m]. The inside of the last total area is divided roughly into a category total portion and a grand total portion, and the former includes n areas that correspond to the category numbers, [1] - [n]. In the case of a restaurant, these categories are types such as dishes, drinks, soups, desserts, etc., and are set appropriately by the user of the register. The sales, [B1T] - [BnT], of such categories are individually stored in the above described n areas. In the grand total part, at the least areas for the sales grand total [ST], the credit grand total [PT], and the deposit grand total [CT] are provided.

In Fig. 5, an example of the key arrangement inside the keyboard [30] is shown, and it includes the commonly known ten keys [K10] for inputting numerical data, etc., a function key

group [KF], and a category key group [KR] provided for the above-described categories. The function key group [KF] includes keys for activating the means for the method of the present invention. More keys than shown in the figure can be provided in actuality, but for simplification, only a verification key [KID], a deferred payment key [KP], an installment payment key [KD], and a cash key [KC] are shown. The category key group [KR] contains several tens of keys as necessary, and they are utilized for rough classification of the sales items and as the activation key of the sale registration means [1] as described later.

The structure of a cash register in which the method of present invention was implemented was briefly explained from the hardware perspective. Next, the method of the present invention will be explained from the software perspective by referring to Fig. 6, which shows the key operation procedure, and the flow chart of Fig. 7, which shows the operation of the means activated by said key operations.

The key operation procedure shown in Fig. 6 (a) is the simplest procedure that does not involve any deferred payment or installment. According to the registration procedure [RP], when the registration key [KR] is pressed after inputting the sale quantity and unit price by operating the ten keys [K10] as shown in (e) of the same figure, the sale registration means of Fig. 7 (r) becomes activated. Since the registration key [KR] is a

category key shown in Fig. 5, one of the  $n$  categories described earlier, such as the registration key [KR $j$ ] of the  $j$ th category, is operated. By this, the CPU [13] calculates the sale amount [A] based on the sale quantity and unit price input from the ten keys [K10]. In the ten key operation example of Fig. 6 (e), the quantity is 3 and the unit price is 560. Therefore, the sale amount [A] is 1680 yen. The sale registration means adds this sale amount to the sales proceeds [S], which is inside the registration area [RA] of the RAM [15], in the step [R1] as indicated in Fig. 7 (r). In the next judging step [R2], the step moves to [R3] since the flag [F] at this stage is 0. The sale amount [A] is added to the total sales [B $j$ T] of the  $j$ th category inside the total area [TA], and moreover, the sale amount [A] is added to the total sales [ST] in Step [R4]. In the last step, [R6], the sale amount [A] is printed by the printer [PRT]. The registration key operation procedure [RP] is repeated the number of times necessary for one sale, the registration is completed, and it shifts to the next deposit key operation procedure [CP]. As shown in Fig. 6 (a), the depositing means [2] of Fig. 7 (c) becomes activated when the cash key [KC] is pressed after inputting the amount [B] received from the customer by using the ten keys [K10]. In the Step [C1] of the depositing means [2], the sales proceeds [S] corresponding to the sale that was added and stored in the registration area [RA] at the registration

stage is added to the deposit grand total [CT] in the total area [TA]. In the next judging step [C2], since the flag [F] is still 0, Steps [C3] and [C4] are skipped, and it shifts to Step [C5]. In this Step [C5], the change [CH], which is the difference between the sale amount [S] and the money received [B], is displayed in the number display device [DISP] and, at the same time, is printed by the printer [PRT]. The receipt printed by the printer [PRT] is handed over to the customer together with the change and one sale is thus completed, but the depositing means continues to clear the sale amount [S] inside the registration area in Step [C6] and prepares for the next sale. In the above manner, the key operation procedures, [RP] - [CP], of Fig. 6 (a) are completely normal procedures, so to speak, and can be said to be the basics of cash register operations. In the method of the present invention, consideration is given to the elimination of operational errors by changing this key operation procedure as little as possible as described later. The key operation procedure shown in Fig. 6 (b) corresponds to a deferred payment sale. Prior to the registration procedure [RP], the verification key [KID] is pressed after inputting the verification number of the customer with a ten key operation, such as that indicated in (f) of the same figure, and the credit balance of the customer is called out. The verification process shown in Fig. 7 (i) is activated by means of this verification

key, and in the first Step [11], the credit amount [P1] of the customer of the verification number [i] (No. 100 in the example of Fig. 6 (f)) is transferred from the credit area [PA] to the registration area [RA] as the sales proceeds [S]. In the next Step [12] the credit amount [Pi] inside the credit area [PA] is cleared once, and furthermore, in Step [13] the sale amount [S], that is to say the credit amount [Pi], is subtracted from the credit grand total [PT] inside the total area. This sale amount [S] = [Pi] is then printed out by means of a printer [PRT] in the next Step [14], and the verification procedure is completed.

The next key operation in Fig. 6 (b) is a registration procedure [RP], and this is repeated multiple times in accordance with the sales content. The sale amount is printed for each item by means of the printer [PRT], and at the same time, the sales proceeds [S] are summed. By pressing the deferred payment key [KP] after finishing the registration, the deferred payment process procedure of Fig. 7 (p) is activated. In the first Step [P1] of this deferred payment procedure, the sale amount [S] that is the result of the above summation is added to the credit grand total [PT] of the total area [TA]. As is clear from the above explanation, this sale amount [S] is an updated credit amount obtained by adding the sale amount of the sale this time to the pre-existing credit amount [Pi]. In the next Step [P2], the sale amount [S], which is the updated credit amount, is transferred to

the credit area [PA] as a credit amount [Pi] and is stored in the area of the verification number [i]. Next, in Step [P3] the sale amount [S] is displayed and, at the same time, is printed out with the printer [PRT]. Furthermore, the sale amount [S] inside the registration area [RA] is cleared in Step [P4], and the deferred payment sales process is completed. At this time, since two receipts are printed out at the same time in Step [P3], one of them is handed over to the customer, and the other one is kept in the store for later balancing.

The key operation procedure of Fig. 6 (c) is for the depositing process of a deferred payment. If the customer wants to pay off the whole credit amount, the credit amount [Pi] of the verification number [i] is called out as the sale amount [S] into the registration area [RA] by pressing the verification key after inputting the verification number [i] of the customer using the ten keys in the same manner as above. Then, by pressing the deposit key [KC] after inputting the deposit amount [B] received from the customer by using the ten keys, the depositing process is carried out. The balancing is completed by handing the change [CH] and a receipt to the customer. At this time, the credit balance [Pi] of the verification number [i] is completely erased, since it was cleared from the credit account area [PA] at the earlier stage at which the verification process was carried out by pressing the verification key [KID].

The key operation procedure of Fig. 6 (d) is for implementing the installment payment processing method of the present invention. As is clearly evident from the drawing, consideration is given so that it is as similar as possible to the key operation procedure explained above. In other words, this key operation procedure (d) consists of a verification procedure [IP] for calling out the credit amount [Pi] of the customer, a procedure for pressing the installment payment key [KD], a registration procedure [RP] as the basic procedure of the cash register, and a depositing procedure [CP], which are the same as those of (b) and (c) of the same figure. What is different from the above procedure is simply that the installment payment key [KD] is pressed one extra time. In this key operation procedure (d), the customer credit amount [Pi] of the verification number [i] is first called out from the credit area [PA] as a sales price to the registration area [RA] in the verification procedure [IP], and then the installment balancing means [3] indicated in Fig. 7 (d) is activated by pressing the installment payment key [KD]. This installment balancing means [3] includes only three steps, as can be seen from the figure. In the first and second steps, [D1] and [D2], the data of the credit amount [Pi] is transferred from the area for the sale amount [S] to the area for the installment amount [D] inside the registration area, and in the third step [D3] 1, which indicates

that installment balancing will be carried out, is assigned to the flag [F].

Next, in the key operation procedure (d), the registration procedure [RP] and the depositing procedure [CP] should be carried out sequentially in exactly the same manner as in a normal sale. When the registration key [KR] is pressed at the end of the registration procedure [RP], the sale registration means [1] is activated. However, since 1 has been assigned to the flag [F], the flow of Fig. 7 (r) becomes different from that of the previous explanation. This time, it skips from the second step [R2] to the fifth step [R5], skipping the Steps [R3] and [R4]. In other words, the sale amount [A] is not added to the category sales total [BjT] or the sales grand total [ST], and the sale amount [A] is just subtracted from the credit amount [Pi] that is in the installment amount [D] inside the registration area [RA]. In the case of installment balancing, this sale amount is part of the credit amount [Pi] that the customer /57. is to pay as an installment, and this is calculated by inputting the quantity and unit price of the items to be paid in installments, which are included in the receipt that was made at the time of the prior deferred payment processing, by using the ten keys [K10] in the same manner as in a regular sale. Of course, the registration procedure [RP] is repeated for each installment balancing object, and therefore, the amount, etc. is

printed onto a receipt each time the registration key [KR] is pressed. This allows the customer to confirm what he/she has paid off in installments and to keep it.

The depositing procedure [CP] after the registration of the items to be paid in installments may be the same as that of a regular sale, but the flow of the installment balancing means [2] activated by this is somewhat different from that of a regular sale as indicated in Fig. 7 (c). In other words, since the flag [F] is 1, the flow shifts from Step [C2] to [C3], and in this step the remaining amount, which is obtained by subtracting the amount being balanced this time from the previous credit amount [Pi] that is in the installment amount [D] inside the registration area [RA], is transferred to the area of verification number 1 in the credit area. Then the step shifts to [C4], and the same remaining amount [D] is added to the credit total of the total area [TA]. Since the sale amount [S], which is the previous credit amount [Pi], was subtracted from this credit grand total [PT] in Step [13] of the previous verification procedure, the previous credit amount of the customer of verification number 1 inside the credit grand total [PT] is consequently replaced by a new credit amount, which is the amount that remained after the installment balancing this time. The later steps, [C5] and [C6], are exactly the same as a regular sale, and the customer [5] can acknowledge the details of the

balance and the amount still due based on the receipt printed in Step [C5]. Moreover, since said flag [F] is cleared to 0 for the first time in the last step, [C6], the register is recovered to the regular state prior to the start of the sale, and the generation of operation errors in which the flag is erased by mistake in the middle of installment balancing can be prevented.

As is clear from the key operation procedure of Fig. 6 and the flow of the process of Fig. 7, the key operation of a cash register in which the method of the present invention is implemented is hardly different from a case of a conventional register, and there is hardly any fear of confusion of key operations occurring. Moreover, the number of steps in each process flow is not very different from that of the past, and only a few steps need to be added overall. Moreover, the processing means and procedures activated individually by means of the function keys are arranged together in a simple module, and no operational mistakes or confusion of the sequences occur.

The method of the present invention can be implemented in various modes without being confined to the above-explained working example. Various modes can be used for flexibility in the key arrangement and combination, the storage area allocation and assignment, and even the arrangement and order of the steps inside each processing means, as long as the main points of the present invention are not deviated from. Moreover, it is clearly

evident that the items displayed in the display device or the items printed by the printer may be sorted out any time in accordance with the usage.

[Effects of the Invention]

As explained above, in the method of the present invention, an installment payment processing function that was not conventionally attempted often is incorporated in an electronic cash register equipped with at the least a sale registration means for calculating the sale amount for each sale by means of a registration key input and for calculating and storing the total of said sales and a depositing means for calculating and storing the total of the deposits by means of a cash key input. At this time, the prescribed purpose can be achieved by a relatively simple means, which is just to arrange the structure in the following manner: An installment balancing means for storing the fact that one portion of the sale is to be balanced as installments by means of an installment payment key input is added; when the installment payment key is input, the sale registration means only calculates the sale amount per sale based on the content stored in the installment balancing means; and the content stored inside the installment balancing means can be erased only by the operation of the depositing means that is based on a deposit key input. In a cash register in which the method of the present invention is implemented, it is needless to

say that the key operations for regular sales and deferred payment sales can be exactly the same as before, but also the key operations are essentially the same as in the past even at the time of installment payment processing and it suffices to insert only a few operation steps. Therefore, the key operations can be simple, making it unlikely for operation errors to occur. Moreover, also in terms of the procedures necessary for the transfer, etc. of the instructions and data inside the computer, the present invention is not originally aimed at increasing the storage or raising the computing accuracy, and simplification is achieved instead since each means and procedure become module-like by using the method of the present invention. Therefore, the number of the processing steps can be reduced, and therefore, the processing speed can be increased. Moreover, as is clear from the above explanation, there is no particular storage area that becomes newly necessary by using the present invention, and as for the keys, it suffices to add only one. Therefore, there are no cost increase factors of the cash register in actuality, and it becomes possible to supply the cash registers at attainable prices. /57:

In the above manner, the method of the present invention can be implemented advantageously in new cash registers that are relatively simple and equipped with an installment payment processing function that was not seen in the past.

#### 4. Brief Explanation of Drawings

All of the figures are for explaining the content of the present invention.

[Figure 1] is a functional schematic diagram showing the principles of the installment payment processing method of an electronic cash register by the present invention.

[Figure 2] is a three dimensional drawing showing the outside view of a cash register in which the method of the present invention is utilized.

[Figure 3] is a block diagram showing an example of the hardware structures of the electronic devices inside a cash register for the implementation of the method of the present invention.

[Figure 4] is an assignment diagram showing an example of the assignment of the storage areas inside the RAM, which is a storage device for the implementation of the method of the present invention.

[Figure 5] is an arrangement drawing showing an example of the key arrangement within the keyboard of a cash register in which the method of the present invention is implemented.

[Figure 6] is an operational procedure chart showing the key operation procedures of a cash register in which the method of the present invention is implemented.

[Figure 7] is a flow chart that shows an example of the flow

from the perspective of the software for the implementation of the method of the present invention.

In the figures,

[1] = sale registration means; [2] = depositing means; [3] = installment balancing means; [10] = microcomputer; [15] = RAM for the storage area; [30] = keyboard; [40] = display/printing means; [50] = electronic cash register; [F] = flag for the data signal for instructing installment balancing; [IP] = verification key operation procedure; [CP] = deposit key operation procedure; [RP] = registration key operation procedure; [KC] = cash key; [KD] = installment payment key; [KID] = verification key; [KP] = deferred payment key; [KR] = category key as a registration key; [K10] = ten keys; [PA] = credit area inside the RAM; and [TA] = total area inside the RAM.

[Figure 1]

1... sale registration means;  
2... depositing means;  
3... installment balancing means.

[Figure 4]

S... sale amount;  
D... installment amount;  
F... installment flag;  
P1... credit amount 1;  
P2... credit amount 2;  
Pn... credit amount n;  
B1T... category 1 sales total;  
BnT... category n sales total;  
ST... sales grand total;  
PT... credit grand total;  
CT... deposit grand total.

[Figure 5]

KID... verification;  
KP... deferred payment;  
KD... installment;  
KC... cash.

[Figure 7]

R6... A is displayed and printed.;  
C5... S, B, and C=B-S are displayed and printed.;  
C6... S, D, and F are cleared.;  
I2... Pi is cleared (PA).;  
I4... S is displayed and printed.;  
P3... S is displayed and printed.;  
P4... S is cleared (RA).;  
D2... S is cleared (RA).

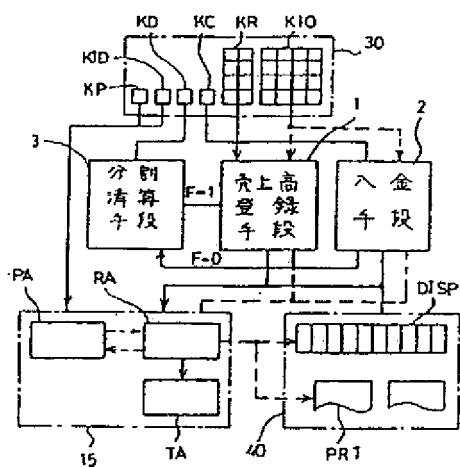


図1 [Figure 1]

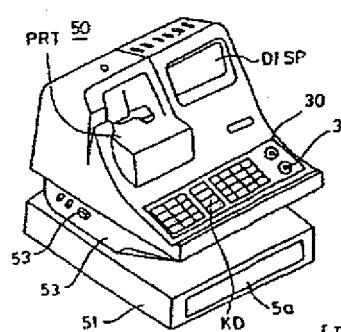


図2 [Figure 2]

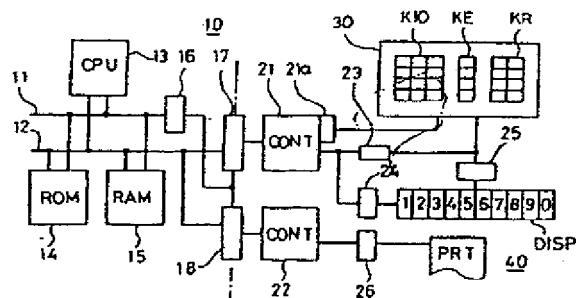


図3 [Figure 3]

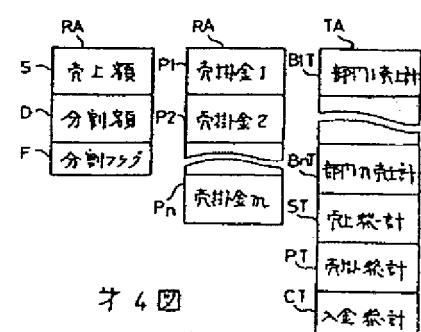
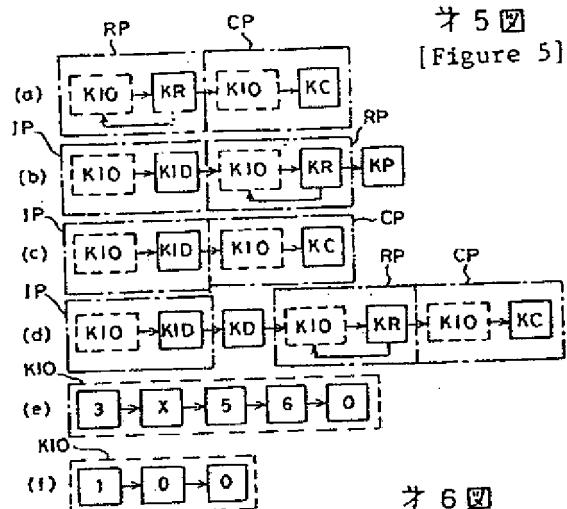
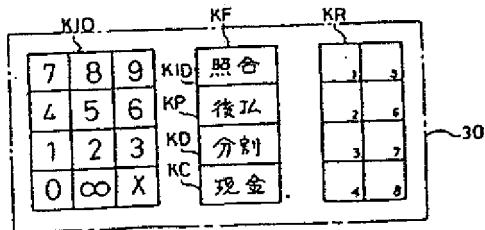
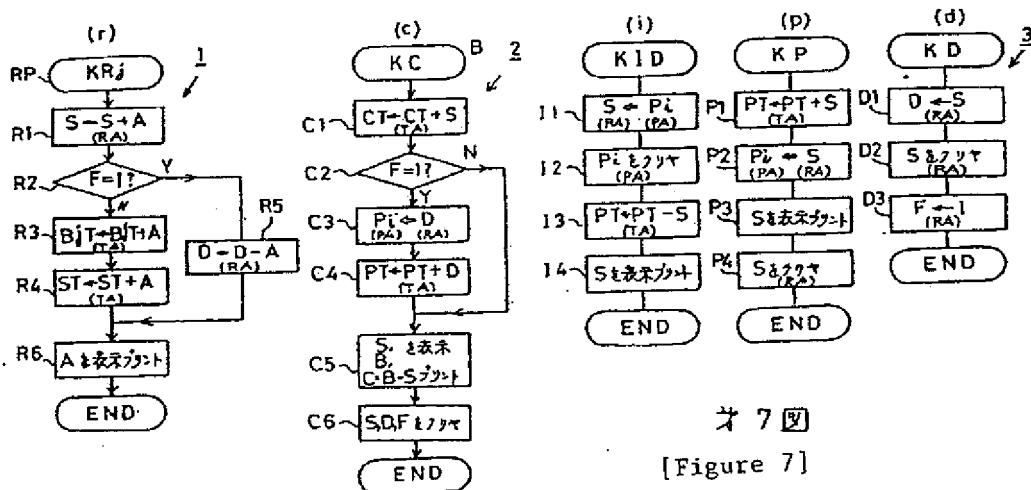


図4 [Figure 4]



才 6 図 [Figure 6]





PTO 99P 2051

Japanese Kokai Patent Application  
No. Hei 2[1990]-289000

INSTALLMENT-PAYMENT INFORMATION PROCESSING DEVICE

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INSTALLMENT-PAYMENT INFORMATION PROCESSING DEVICE

[Bunkatsubrai joho shori sochi]

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[There are no amendments to this patent.]

Claims

/1

1. An installment-payment information processing device characterized in that it is equipped with:
  - an input means for inputting the merchandise amount and the number of installments,
  - a memory means having a merchandise-amount storage area that stores the merchandise amount input by means of this input means, a number-of-installments storage area that stores the number of installments input by the above-mentioned input means, and an interest storage area that stores the interest corresponding to the number of installments,
  - an output means,
  - and a control means having a payment amount calculating means that ascertains the payment amount from the merchandise amount stored in the above-mentioned merchandise-amount storage area and the interest stored in the above-mentioned interest storage area and which corresponds to the number of installments stored in the above-mentioned number-of-payments storage area, an installment-amount calculating means that ascertains the installment amount each time from the payment amount found by means of this payment-amount calculating means and the number of installments stored in the above-mentioned number-of-installments

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<sup>1</sup> Numbers in the margin indicate pagination in the foreign text.)

storage area, and a means that outputs, to the above-mentioned output means, at least one of the above-mentioned payment amounts and the installment amount for each occurrence.

2. An installment-payment information processing device characterized in that it is equipped with:

an input means for inputting the merchandise amount and the number of installments, a memory means having a merchandise-amount storage area that stores the merchandise amount input by means of this input means, a number-of-installments storage area that stores the number of installments input by the above-mentioned input means, remitted down-payment amount storage area that stores the down payment input by the above-mentioned input means, and an interest storage area that stores the interest corresponding to the number of installments,

an output means,

and a control means having an installment-object amount calculating means that determines the installment-object amount from the merchandise amount stored in the above-mentioned merchandise-amount storage area and the down-payment amount stored in the above-mentioned down-payment amount storage area, a payment-amount calculating means that determines the payment amount from the installment-object amount found by means of this installment-object amount calculating means and the interest stored in the above-mentioned interest storage area and which corresponds to the number of installments stored in the

above-mentioned number-of-installments storage area, an installment-amount calculating means that determines the installment amount each time from the payment amount determined/2 by means of this payment-amount calculating means and the number of installments stored in the above-mentioned number-of-installments storage area, a total-payment amount calculating means that determines the total-payment amount from the down-payment amount stored in the above-mentioned down-payment amount storage area and the payment amount that was determined by the above-mentioned payment-amount calculating means, and a means that outputs, to the above-mentioned output means, at least one of the total-payment amount and the installment amount for each occurrence.

3. An installment-payment information processing device characterized in that it is equipped with:

an input means for inputting a merchandise amount, the number of installments, and a bonus-payment total amount,

a memory means having a merchandise-amount storage area that stores the merchandise amount input by means of this input means, a number-of-installments storage area that stores the number of installments input by the above-mentioned input means, a bonus-payment total amount storage area that stores a bonus-payment total amount input by the above-mentioned input means, and an interest storage

area that stores the interest corresponding to the number of installments, an output means, and a control means having a payment-amount calculating means that determines the payment amount from the merchandise amount stored in the above-mentioned merchandise-amount storage area and the interest stored in the above-mentioned interest storage area and which corresponds to the number of installments stored in the above-mentioned number-of-installments storage area, a bonus-payment total amount calculating means that, along with finding a bonus-payment number of times from the number of installments stored in the above-mentioned number-of-installments storage area, ascertains a bonus-payment total amount from that bonus-amount number of times and the bonus-payment total amount stored in the above-mentioned bonus-payment total amount storage area, an equal installment-object amount calculating means that determines an equal installment-object amount from the payment amount found by the above-mentioned payment-amount calculating means and the bonus-payment total amount found by the above-mentioned bonus-payment total amount calculating means, and an installment-amount calculating means that determines the installment amount each time from the equal installment-object amount found by the equal installment-object amount calculating means and the number of installments stored in the above-mentioned number-of-installments storage area, and a means that outputs, to the above-mentioned output means, at least one of the

above-mentioned payment amount and the installment amount for each occurrence.

4. An installment-payment information processing device characterized by the fact that it is equipped with:

an input means for inputting the merchandise amount, the number of installments, and the credit/loan company designating information that designates any one from among multiple credit/loan companies,

a memory means having a merchandise-amount storage area that stores the merchandise amount input by means of this input means, a number-of-payments storage area that stores the number of payments input by the above-mentioned input means, and an interest storage area that stores the interest corresponding to the number of installments for each of the multiple credit/loan companies,

an output section,

and a control means that has a payment-amount calculating means that determines the payment amount from the merchandise amount stored in the above-mentioned merchandise-amount storage area, the number of installments stored in the above-mentioned number-of-installments storage area, and the interest stored in the above-mentioned interest storage area corresponding to the credit/loan company designation information, an installment-amount calculating means that determines the installment amount each time from the

payment amount found by means of this payment amount calculating means and the number of installments stored in the above-mentioned number-of-installments storage area, and a means that outputs to the above-mentioned output means, at least one of the above-mentioned payment amount and the installment amount for each occurrence.

#### Detailed explanation of the invention

##### **Industrial application field**

This invention relates to an installment-payment information processing device. Specifically, it relates to an installment-payment information processing device made so as to be able to, in the event a customer wishes to purchase merchandise on installment payments, clearly show the customer, for example, the installment amount for each time and the total-payment amount.

##### **Prior art**

In the past, in a small retail store or the like, in the event a customer wished to purchase merchandise on installment payments, the clerk calculated the installment amount for each time and the total-payment amount from the merchandise amount, the number of installments, reasonable interest, and the like, using a desk calculator, and showed this to the customer.

Therefore, the customer decided whether or not to purchase the merchandise based on/3

a reasonable installment amount for each time, the total-payment amount, and the like. In the event of purchasing the merchandise on installment payments, the customer confirmed the accurate amounts for the installment amount for each time and the total-payment amount from specifications that were sent from a credit/loan company after the purchase, and made the payments according to that.

#### Problems to be solved by the invention

In the event a customer desired to purchase merchandise on installments, as in the past, as for the fact that an accurate amount for the installment amount for each time and the total-payment amount could not be shown to the customer, since accurate information could not be offered to the customer for deciding whether to purchase the merchandise, besides being unfriendly to the customer, it was also the cause of lowering the purchasing power of the customer.

That being said, from the seller's side, in accurately calculating the payment amount for each time and the total-payment amount using a desk calculator at that location, not only was this troublesome, but because it also took time, the response to the customer was delayed, which was connected to a lowering of the quality of service.

In particular, in the case of an installment purchase, since the interest was different

depending on the credit/loan company and also depending on the number of installments, since the customer had to calculate the installment amount for each time and the total installment amount by the interest corresponding to the desired credit/loan company and the number of installments, the calculations were more troublesome.

In addition, in the event the customer desired to include a down payment and in the event he/she desired to make a bonus payment, the calculations became even more troublesome. Therefore, by including these, accurately calculating the installment amount for each time and the total-payment amount at the seller side by means of a desk calculator became extremely difficult from a practical standpoint.

The purpose of this invention is to offer an installment-payment information processing device that solves these types of prior problems, and which is made so as to be able to simply and quickly show the installment amount for each time and the total installment amount to a customer in the event the customer desires an installment purchase.

#### Means for solving the problems

In the invention recorded in Claim 1, it is characterized by an input means for inputting the merchandise amount and the number of installments, a memory means having a

merchandise-amount storage area that stores the merchandise amount input by this input means, a number-of-installments storage area that stores the number of installments input by the above-mentioned input means, and an interest storage area that stores the interest corresponding to the number of installments, an output means, and a control means having a payment amount calculating means that determines the payment amount from the merchandise amount stored in the above-mentioned merchandise-amount storage area and the interest stored in the above-mentioned interest storage area and which corresponds to the number of installments stored in the above-mentioned number-of-payments storage area, an installment amount calculating means that determines the installment amount for each time from the payment amount found by means of this payment amount calculating means and the number of installments stored in the above-mentioned number-of-installments storage area, and a means that outputs, to the above-mentioned output means, at least one of the above-mentioned payment amount and the installment amount for each time.

Also, in the invention recorded in Claim 2, it is characterized by an input means for inputting the merchandise amount and the number of installments, a memory means having a merchandise-amount storage area that stores the merchandise amount input by this input means, a number-of-installments storage area that stores the number of installments input by the above-mentioned input means, remitted down-payment amount storage area that stores the down

payment that is inputted by the above-mentioned input means, and an interest storage area that stores the interest corresponding to the number of installments, an output means, and a control means having an installment-object amount calculating means that determines the installment-object amount from the merchandise amount stored in the above-mentioned merchandise-amount storage area and the down-payment amount stored in the above-mentioned down-payment amount storage area, a payment amount calculating means that determines the payment amount from the installment-object amount found by this installment-object amount calculating means and the interest stored in the above-mentioned interest storage area and which corresponds to the number of installments stored in the above-mentioned number-of-installments storage area, an installment-amount calculating means that determines the installment amount for each time from the payment amount found by this payment-amount calculating means and the number of installments stored in the above-mentioned number-of-installments storage area, a total-payment amount calculating means that determines the total-payment amount from the down-payment amount stored in the above-mentioned down-payment amount storage area and the payment amount found by the above-mentioned payment-amount calculating means, and a means that outputs, to the above-mentioned output means, at least one of the total-payment amount and the installment amount for each time.

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Also, in the invention recorded in Claim 3, it is characterized by an input means for

inputting a merchandise amount, the number of installments, and a bonus-payment total amount, a memory means having a merchandise-amount storage area that stores the merchandise amount input by this input means, a number-of-installments storage area that stores the number of installments input by the above-mentioned input means, a bonus-payment total amount storage area that stores a bonus-payment total amount input by the above-mentioned input means, and an interest storage area that stores the interest corresponding to the number of installments, an output means, and a control means having a payment-amount calculating means that determines the payment amount from the merchandise amount stored in the above-mentioned merchandise-amount storage area and the interest stored in the above-mentioned interest storage area and which corresponds to the number of installments stored in the above-mentioned number-of-installments storage area, a bonus-payment total-amount calculating means that, along with determining a bonus payment number-of-times from the number of installments stored in the above-mentioned number-of-installments storage area, determines a bonus-payment total amount from that bonus amount number-of-times and the bonus-payment total amount stored in the above-mentioned bonus-payment total amount storage area, an equal-installment-object amount calculating means that determines an equal-installment-object amount from the payment amount found by the above-mentioned payment amount calculating means and the bonus-payment total amount found by the above-mentioned bonus-payment total amount calculating means, and

installment-amount calculating means that determines the installment amount for each time from the equal-installment-object amount found by the equal-installment-object amount calculating means and the number of installments stored in the above-mentioned number-of-installments storage area, and a means that outputs, to the above-mentioned output means, at least one of the above-mentioned payment amount and the installment amount for each time.

Also, in the invention recorded in Claim 4, it is characterized by an input means for inputting the merchandise amount, the number of installments, and the credit/loan company designating information that designates any one from among multiple credit/loan companies, a memory means having a merchandise-amount storage area that stores the merchandise amount input by this input means, a number-of-payments storage area that stores the number of payments input by the above-mentioned input means, and an interest storage area that stores the interest corresponding to the number of installments for each of the multiple credit/loan companies, an output section, and a control means that has a payment-amount calculating means that determines the payment amount from the merchandise amount stored in the above-mentioned merchandise-amount storage area, the number of installments stored in the above-mentioned number-of-installments storage area, and the interest stored in the above-mentioned interest storage area corresponding to the credit/loan company designation information, an installment-amount calculating means that determines the installment amount for each time from the payment

amount found by this payment-amount calculating means and the number of installments stored in the above-mentioned number-of-installments storage area, and a means that outputs, to the above-mentioned output means, at least one of the above-mentioned payment amount and the installment amount for each time.

#### Operations

In the invention recorded in Claim 1, when the merchandise amount and the number of installments are inputted by the input means, the merchandise amount is stored in the merchandise-amount storage area and the number of installments is stored in the number-of-installments storage area.

When this is done, the control means determines the payment amount from the merchandise amount stored in the merchandise-amount storage area and determines the interest stored in the interest storage area and which corresponds to the number of installments stored in the number-of-installments storage area. Continuing, it determines the installment amount for each time from the payment amount and the number of installments stored in the number-of-installments storage area. Finally, at least one of the payment amount and the installment amount for each time is output to the output means.

Therefore, the payment amount for the installment for each time can be simply and easily shown to the customer. This fact, along with being able to lighten the burden at the seller side, can also contribute to quickly acquiring the response and improving the service to the customer.

Also, in the invention recorded in Claim 2, when the merchandise amount, the number of installments, and the down-payment amount are inputted by the input means, the merchandise amount is stored in the merchandise-amount storage area, the number of installments is stored in the number-of-installments storage area, and the down-payment amount is stored in the down-payment amount storage area, respectively.

When this is done, the control means determines the installment-object amount from the merchandise amount stored in the merchandise-amount storage area and the down-payment amount stored in the down-payment amount storage area. Continuing, it determines the payment amount from the amount subject to installments, and determines the interest that is stored /5 in the interest storage area and which corresponds to the number of installments stored in the number-of-installments storage area. Continuing, it determines the installment amount for each time from the payment amount and the number of installments stored in the number-of-installments storage area. Also, it determines the total-payment amount from the down-payment amount and the payment amounts. Finally, at least one of the payment amount and installment amount for each time is outputted to the output means.

Therefore, because the customer can know at least one of the total-payment amount and the installment amount each time, information can be supplied that meets the requirements of the customer.

Also, in the invention recorded in Claim 3, when the merchandise amount, the number of installments, and the bonus-payment total amount are inputted by the input means, the merchandise amount is stored in the merchandise-amount storage area, the number of installments is stored in the number-of-installments storage area, and the bonus-payment total amount is stored in the bonus-payment total amount storage area.

When this is done, the control means determines the payment amount from the merchandise amount stored in the merchandise-amount storage area and determines the interest stored in the interest storage area and which corresponds to the number of installments stored in the number-of-installments storage area. Also, along with determining the number of bonus payments from the number of installments stored in the number-of-installments storage area, it determines the bonus-payment total amount from that number of bonus payments and the bonus-payment total amount stored in the bonus-payment total amount storage area. Continuing, it determines the equal-installment-object amount from the above-mentioned payment amount and the above-mentioned bonus-time payment total amounts. It then determines the installment amount for each time from the equal-installment-object amount and the number of installments

stored in the number-of-installments storage area. Finally, it sends to the output means at least one of the payment amount and the installment amount for each time.

Therefore, because the customer can know at least one of the payment amount including the bonus-payment total amounts and the payment amount for each time, information can be offered that meets the requirements of the customer.

Also, in the invention recorded in Claim 4, when the merchandise amount, the number of installments, and the credit/loan company designating information are inputted by the input means, the merchandise amount is stored in the merchandise-amount storage area, and the number of installments is stored in the number-of-installments storage area.

When this is done, the control means determining the payment amount from the merchandise amount stored in the merchandise-amount storage area and determines the interest stored in the interest storage area and which corresponds to the number of installments stored in the number-of-installments storage area and the credit/loan company designating information. Continuing, it finds the installment amount for each time from the payment amount and the number of installments stored in the number-of-installments storage area. Finally, it sends to the output means at least one of the payment amount and the installment amount for each time.

Therefore, even if it is a credit/loan company that the customer desires, the installment amount for each time can be simply and quickly shown with the interest corresponding to the

number of installments for that credit/loan company, and the information that meets the requirements of the customer can be supplied.

#### Application Examples

Below, an explanation is given in regard to application examples in which this invention is assembled in an electronic cash register (ECR), while referencing the figures.

##### Application Example 1

Application Example 1 is shown in Figures 1 to 5. First, in Figure 1, (11) is a CPU. The ROM (13) that stores the program that determines the operations of the CPU (11), the RAM (14) used as a memory means, the keyboard (15) used as an input means, the display device (16), the drawer (17), and the printer (18) used as the output means are respectively connected to the CPU (11) through the address data base (12).

As shown in Figure 3, in the keyboard (15), besides the control key (41), the numerical keys (42) of from "00" and "0" to "9," the "DP1" "DP2" @@@ section key (43), the responsible person key (44) of from "a" to "h," the subtotal key (45), the tended/current total key (46), and the like, which an ECR is normally equipped with, an installment key (47) for inputting installment-payment information, a number-of-times key (48), a bonus key (49), and a down-

payment key (50), are respectively provided.

The control key (41), along with conducting the on/off control of the power supply, executes (by instructing the above-mentioned CPU (11)) the various operations such as "register," "check," "accumulate," "total," and the like. Here, the term "register" specifies an/6 operation that stores the amount for the merchandise sold and the like in the RAM (14), conducts totaling of the overall amount and the like, and prints those results on a receipt and in a journal with the printer (18). The term "check" specifies an operation that prints out the total sales amount and the total number of sales that have been stored in the RAM (14) by means of "register." The term "accumulate" specifies an operation that, for example, at the end of business for one day, along with printing out the total sales amount and the total number of sales that have been accumulated and stored in the RAM (14) by means of "register," clears the contents of the RAM (14). The term "total" specifies an operation that calculates the installment amount and the total-payment amount for one month based on the inputted merchandise amount, number of installments, bonus-payment total amount, and down payment, and prints those out.

In the RAM (14), besides the area for used for storing the various sales data by means of "register," various areas and flags are provided for storing the installment-payment information, such as is shown in Figure 2.

Here, for the various areas used for storing the installment-payment information, there are

a merchandise-amount storage area (21), a number-of-installments storage area (22), a bonus-payment total amount storage area (23), a down-payment amount storage area (24), an applied-interest storage area (25), an interest storage area (26) corresponding to the number of installments ( $N = 12$ ), an interest storage area (27) corresponding to the number of installments ( $N = 24$ ), an interest storage area (28) corresponding to the number of installments ( $N = 36$ ), an installment-object amount storage area (29), a payment-amount storage area (30), a bonus payment number-of-times storage area (31), a bonus-payment total amount storage area (32), an equal installment-object amount storage area (33), an installment per month storage area (34), and a total-payment amount storage area (35).

The merchandise amount, number of installments, bonus-payment total amount, and down-payment amount that are inputted by the above-mentioned numeric keys (42) and the above-mentioned installment key (47), the number-of-times key (48), the bonus key (49), and the down payment key (50) are respectively stored in the merchandise-amount storage area (21), the number-of-installments storage area (22), the bonus-payment total amount storage area (23), and the down-payment amount storage area (24).

The interest corresponding to the inputted number of installments is selected from among the above-mentioned interest storage areas (26, 27, 28) and stored in the applied-interest storage area (25). The different interest [rates] corresponding to each predetermined number of

installments are respectively stored in the interest storage area (26) corresponding to a number of installments ( $N = 12$ ), the interest storage area (27) corresponding to a number of installments ( $N = 24$ ), and the interest storage area (28) corresponding to a number of installments ( $N = 36$ ). In regard to these interest [rates], these are made so as to be conveniently set and changed by operations from the keyboard (15).

The installment-object amount determined by means of totaling the later explained installment-payment information, the payment amount, the number of bonus payments, the bonus-payment total amount, equal installment-object amount, interest amount per month, and the total-payment amount are made so as to be respectively stored in the installment-object amount storage area (29), payment amount storage area (30), number of bonus payments storage area (31), bonus payment total amount storage area (32), equal installment-object amount storage area (33), interest amount per month storage area (34), and total-payment amount storage area (35).

Also, for the various flags, there are the installment key flag (36), number-of-times key flag (37), bonus key flag (38), and down-payment key flag (39).

The CPU (11), along with executing various operations such as "register," "check," and "accumulate" according to the program stored in the ROM (13), executes the "total," in other words, the processes shown in Figures 5(A), (B), (C), (D), and (E). Here, the control means is

constructed by the CPU (11) and the ROM (13). The control means, along with executing each of the above-mentioned operations of "register," "check," and "accumulate," is equipped with a means that executes the processes shown in Figures 5(A), (B), (C), (D), and (E).

In other words, it is equipped with: an installment-object amount calculating means that determines the amount subject to installment by subtracting the down-payment amount stored in the above-mentioned down-payment amount storage area (24) from the merchandise amount stored in the above-mentioned merchandise-amount storage area (21); a payment amount calculating means that determines the payment amount by multiplying the installment-object amount determined by this installment-object amount calculating means and the interest stored in the above-mentioned interest storage areas (26, 27, 28), and which corresponds to the number of installments stored in the above-mentioned number-of-/7 installments storage area (14); a bonus-payment total amount calculating means that determines the bonus-payment total amount by, along with ascertaining the number of bonus payments from the number of installments stored in the above-mentioned number-of-installments storage area (14), multiplies that number of bonus payments by the bonus-payment total amount stored in the above-mentioned bonus-payment total amount storage area (23); an equal installment-object amount calculating means that determines the equal installment-object amount by subtracting the bonus-payment total amount found by the above-mentioned bonus-payment total amount

calculating means from the payment amount found by the above-mentioned payment amount calculating means; an installment amount calculating means that determines the installment amount for each time by dividing the equal installment-object amount, found by this equal installment-object amount calculating means by the number of installments stored in the above-mentioned number-of-installments storage area (24); a total-payment amount calculating means that determines the total-payment amount by adding the down-payment amount stored in the above-mentioned down-payment amount storage area (24) and the payment amount; a means that prints the down-payment amount with the above-mentioned printer (18), the installment amount for each time, the number of installments, and the bonus-payment total amount and the number of bonus payments as well as the total-payment amount; and the like.

Next, the operation of this application example is explained. In regard to each of the operations of "register," "check," and "accumulate," since these are the same as those of an ordinary ECR, here, [these are omitted], and an explanation is given only in regard to the "total" operation in the case of totaling the installment-payment information.

In order to total the installment-payment information, first, with the control key (41) in the state in which it is switched to "total," after the merchandise amount is inputted by the numeric keys (42), the installment key (47) is pushed. Continuing, after the number of times is inputted by the numeric keys (42), the number-of-times key (48) is pushed. Lastly, the subtotal

key (45) is pushed. In the event there is a bonus-payment total, following the number-of-times key (48), after the amount of payment at bonus time (bonus-payment total amount) is inputted by the numeric keys (42), the bonus key (49) is pushed. In the event there is money received as a down payment, following the bonus key (49), after the down-payment amount is inputted by the numeric keys (42), the down payment key (50) is pushed.

On the other hand, the CPU (11) executes the processes according to the flow charts shown in Figures 5(A), (B), (C), and (D), (E). First, in the step (hereinafter, simply abbreviated as ST.) (1) shown in Figure 5 (A), the control key (41) determines whether it is the "total" mode. If it is not the "total" mode, it advances to (ST2), and another mode process is conducted. If it is the "total" mode, in (ST3 to ST8), the inputted key determines which it is. In the event it is not the subtotal key (45), numeric keys (42), installment key (47), number-of-times key (48), bonus key (49), nor down-payment key (50), it is processed as an error.

At (ST5), when it is confirmed that the installment key (47) has been pushed, it advances to (ST11; after the numeric data (in this case, the merchandise amount) that was inputted at (ST4) have been stored into the merchandise-amount storage area (21), the installment key flag (36) is set to "1" at (ST12).

At (ST6), when it has been confirmed that the number-of-times key (48) has been pushed, it advances to (ST13), and a determination is made as to which of "12," "24," or "36" the

numeric data that were inputted at (ST4) are. If the numeric data are not one of the above-mentioned, it is processed as an error. If the numeric data are any one of the above-mentioned, it advances to (ST14), and the numeric data (in this case, the number of installments) are stored in the number-of-installments storage area (22); continuing, at (ST15), the interest corresponding to the number of times is selected from among the interest storage areas (26, 27, 28); afterwards this is stored into the applied-interest storage area (25) and the number-of-times key flag (37) is set to "1" at (ST16).

At (ST7), when it is confirmed that the bonus key (49) has been pushed, it advances to (ST17); after the numeric data (in this case, the bonus-payment total amount) inputted at (ST4) are stored into the bonus-payment total amount storage area (23), it sets the bonus key flag (38) to "1" at (ST18).

At (ST8), when it is confirmed that the down payment key (50) has been pushed, it advances to (ST19), and after the numeric data (in this case, the down-payment amount) that was inputted at (ST4) is stored to the down-payment amount storage area (24), it sets the down payment key flag (39) to "1" at (ST20).

Therefore, when the merchandise amount, the number of installments, the /8 bonus-payment total amount, and the down-payment amount are successively inputted, the merchandise amount is stored in the merchandise-amount storage area (21), and a "1" is set in the

installment key flag (36). Also, as for the number of installments, along with it being stored in the number-of-installments storage area (22), the interest corresponding to that number of installments is stored in the applied-interest storage area (25), and the number-of-times key flag (37) is set to "1." Also, the bonus-payment total amount is stored into the bonus-payment total amount storage area (23), and the bonus key flag (38) is set to a "1." Also, the down-payment amount is stored to the down-payment amount storage area (24), and the down-payment key flag (39) is set to a "1."

When it is confirmed at (ST3) that the subtotal key (45) has been pushed, at (ST21 to ST25), determinations are successively made as to whether the installment key flag (36), the number-of-times key flag (37), the bonus key flag (38), and the down-payment key flag (39) are "1." At the decision of (ST21) and (ST22), in the event both the installment key flag (36) and the number-of-times key flag (37) are not "1," it is processed as an error.

When it is determined at the decisions of (ST21 to ST25) that all of the key flags (36, 37, 38, 39) are "1," in other words, when it is confirmed that the merchandise amount, the number of installments, the bonus-payment total amount, and the down-payment amount have all been inputted, it advances to the process of the flow chart shown in Figure 5(B). First, at (ST31), the contents (down-payment amount) of the down-payment amount storage area (24) are subtracted from the contents (merchandise amount) of the merchandise-amount storage area (21),

the installment-object amount is determined, and that installment-object amount is stored into the installment-object amount storage area (29).

Continuing, at (ST32), the contents (installment-object amount) of the installment-object amount storage area (29) and the contents (interest corresponding to the number of installments) of the applied-interest storage area (25) are multiplied, the payment amount is determined, and the payment amount is stored into the payment amount storage area (30).

Continuing, at (ST33 to ST35), a decision is made as to whether the number of installments is "12," "24," or "36." If the number of installments is "12," it advances to (+ST36) and the number of bonus payments "2" is stored into the number-of-bonus-payments storage area (31); continuing, it advances to "ST37" and the bonus-payment total amount is found by multiplying the contents (bonus-payment total amount) of the bonus-payment total amount storage area (23) by the contents (number of bonus payments "2") of the number-of-bonus-payments storage area (31); afterwards, the bonus-payment total amount is stored into the bonus-payment total amount storage area (32), then it advances to (ST42).

If the number of installments is "24," it advances to (ST38) and the number of bonus payments "4" is stored into the payment storage area (31); continuing, it advances to (ST39) and the bonus-payment total amount is determined by multiplying the contents (bonus-payment total amount) of the bonus-payment total amount storage area (23) by the contents (number of bonus

payments "4" of the number-of-bonus-payments storage area (31), afterwards, the bonus-payment total amount is stored into the bonus-payment total amount storage area (32), then it advances to (ST42).

Also, if the number of installments is "36," it advances to (ST40) and the number of bonus payments "6" is stored to the payment storage area (31); continuing, it advances to (ST41), the bonus-payment total amount is found by multiplying the contents (bonus-payment total amount) of the bonus-payment total amount storage area (23) by the contents (number of bonus payments "6") of the number-of-bonus payments storage area (31); afterwards the bonus-payment total amount is stored into the bonus-payment total amount storage area (32), then it advances to (ST42).

Continuing, at (ST42), the average installment-object amount is determined by subtracting the contents (bonus-payment total amount) of the bonus-payment total amount storage area (32) from the contents (payment amount) of the payment amount storage area (30); this average installment-object amount is stored into the average installment-object amount storage area (33).

Continuing, at (ST43), the installment amount per month is found by dividing the contents (equal installment-object amount) of the equal installment-object amount storage area (33) by the contents (number of installments) of the number-of-installments storage area (22);

this installment amount per month is stored into the installment amount storage area (34).

Continuing, at (ST44), the total-payment amount is found by adding the contents (down-payment amount) of the down-payment amount storage area (24) and the contents (payment amount) of the payment-amount storage area (30); this total-payment amount is stored to the total-payment amount storage area (35). /9

Continuing, at (ST45), the contents (down-payment amount) of the down-payment amount storage area (24), the contents (installment amount per month) of the installment amount per month storage area (34), the contents (number of installments) of the number-of-installments storage area (22), the contents (bonus-payment total amount) of the bonus-payment total amount storage area (23), the contents (number of bonus payments) of the number-of-bonus-payments storage area (31), and the contents (total-payment amount) of the total-payment amount storage area (35), respectively, are printed by the printer (18), and by this means, for example, a sheet such as is shown in Figure 4 is issued.

Finally, at (ST46), the contents of each area in each flag are cleared, except for the interest storage areas (26, 27, 28) corresponding to the number of installments ( $N = 12, 24, 36$ ).

In this case, using the amount in which the down-payment amount was subtracted from the merchandise amount as the installment-object amount, the bonus-payment amount, the bonus-payment total amount, the installment amount per month, and the total-payment amount

are determined, and these are printed out. Therefore, even in the event the customer desires to remit a down payment and make a payment at bonus time, the installment-payment information including such a desire can be simply and quickly found.

Also, at the decisions of (ST21 to ST25), except for the down-payment key flag (39), the fact that all of the other key flags (36, 37, 38) are "1" is confirmed, in other words, except for the down-payment amount, the fact is confirmed that the merchandise amount, the number of installments, and the bonus-payment total amount have been inputted is confirmed, then it advances to the process of the flow chart shown in Figure 5(C). There, at (ST51), after the contents (merchandise amount) of the merchandise-amount storage area (21) have been transferred to the installment-object amount storage area (29), it advances to (ST32) of Figure 5(B).

In this case, since the down-payment amount was not inputted, the merchandise amount became the installment-object amount as is, and the installment amount per month and payment amount were calculated. Because the content of the down-payment amount storage area (24) is 0, the total-payment-amount found at (ST44) and the total-payment amount that was printed out at (ST45) matches the contents of the payment amount storage area (30).

Also, at the decisions of (ST21 to ST25), except for the bonus key flag (38), when the fact that all of the other key flags (36, 37, 39) are "1" is confirmed, in other words, when the fact

that, except for the bonus-payment total amount, the merchandise amount, the number of installments, and the down-payment amount have been inputted, is confirmed, it advances to the process of the flow chart shown in (Figure 5(D)). There, at (ST52), the installment-object amount is determined by subtracting the contents (down-payment amount) of the down-payment amount storage area (24) from the contents (merchandise amount) of the merchandise-amount storage area (21); this installment-object amount is stored into the installment-object amount storage area (29). Continuing, at (ST53), an equal installment-object amount (= payment amount) is determined by multiplying the contents (installment-object amount) of the installment-object amount storage area (29) by the contents (interest corresponding to the number of installments) of the applied-interest storage area (25); after these are stored in the equal installment-object amount storage area (33) and the payment amount storage area (30), it advances to (ST43) of Figure 5(B).

In this case, the results of subtracting the down-payment amount from the merchandise amount is used as the installment-object amount, and the installment amount per month and the payment amount are calculated. Since the contents of the bonus-payment total amount storage area (23) and the number-of-bonus payments storage area (31) are 0, the bonus-payment total amount and the number of bonus payments that are printed out at (ST45) are printed out as 0.

Also, in the decisions of (ST2T to ST25), except for the bonus key flag (38) and the

down-payment key flag (39), when the fact that the other key flags (36, 37) are both "1" is confirmed, in other words, when the fact that the merchandise amount and the number of installments have been inputted is confirmed, it advances to the process of the flow chart shown in Figure 5(E). There, at (ST54), the content (merchandise amount) of the merchandise-amount storage area (21) is transferred to the installment-object amount storage area (29). Continuing, at (ST55), the equal installment-object amount (= payment amount) is determined by multiplying the contents (installment-object amount) of the installment-object amount storage area (29) by the contents (interest corresponding to the number of installments) of the applied interest storage area (25); these are stored into the equal installment-object amount storage area (33) /10 and the payment amount storage area (30). Continuing, at (ST56), the installment amount per month is found by dividing the contents (equal installment-object amount) of the equal installment-object amount storage area (33) by the contents (number of installments) of the number-of-installments storage area (22); afterwards the installment amount per month is stored into the installment-amount-per-month storage area (34), then it advances to (ST45) of Figure 5(B).

In this case, since the down-payment amount is not inputted, the merchandise amount is used as the installment-object amount as is, and the installment amount per month and the payment amount are calculated. Because the contents of the down-payment amount storage area

(24), the bonus-payment total amount storage area (23), and the number-of-bonus-payments storage area (31) are 0, the down-payment amount, the bonus-payment total amount, and the number of bonus-payment totals that are printed out at (ST45) are printed out as 0.

According to this application example, when the merchandise amount and the number of installments are inputted from the keyboard (15), the merchandise amount is used as the installment-object amount, the installment amount per month and the payment amount are determined, and these are printed out. Since the customer can ascertain the installment amount per month and the payment amount according to the interest corresponding to the desired number of installments, along with being able to lighten the burden for the sales side, the response to the customer is also quickly obtained, which it can contribute to an improvement in service.

Also, when the merchandise amount, the number of installments, and the down-payment total amount are inputted from the keyboard (15), the merchandise amount minus the down payment amount is used as the installment-object amount; the installment amount per month and the payment amount can be determined, and these are printed out. Therefore, even when the customer desires to remit payment as a down payment, since the installment amount per month excepting that bonus-payment total total amount, can be simply and quickly determined, it can offer information that meets the requirements of the customer.

Also, when the merchandise amount, the number of installments, and the bonus-payment total amount are inputted from the keyboard (15), the merchandise amount is used as the installment-object amount: the number of bonus payments, the bonus-payment total amount, the installment amount per month, and the payment amount are found, and these are printed out. Therefore, even in the event the customer desires to make a payment at bonus time, since the installment amount per month excluding the bonus time payment total amount can be simply and quickly determined, it can offer information that meets the requirements of the customer.

Also, when the merchandise amount, the number of installments, the down-payment amount, and the bonus-time payment amount are input from the keyboard (15), the merchandise amount minus the down-payment amount is used as the installment-object amount; the number of bonus payments, the bonus-payments total amount, the installment amount per month, and the total payment amount are determined, and these are printed out. Therefore, even when the customer wants to make a down payment or a bonus-time payment, installment-payment information including these requests can be provided.

#### Application Example 2

Application Example 2 is one that is made so as to conduct the installment payment totaling with a credit/loan company that the customer designates from among three credit/loan

companies and the interest for the number of installments, which is the same as shown in Figures 1 and 4 explained in Application Example 1; Figure 2 is changed to Figure 6, Figure 3 to Figure 7, and Figure 5(A) to (E) to Figure 8(A), (B), respectively. Here, only the functions that are different from Application Example 1 are explained, and explanations in regard to the common functions are omitted.

In Figure 6, the interest storage areas (26 to 28) corresponding to the number of installments in Application Example 1, the installment-object amount storage area (29), and the equal installment-object amount storage area (33) are omitted; in place of those, the interest storage areas (51) (51<sub>1</sub> to 51<sub>3</sub>), (52) (52<sub>1</sub> to 52<sub>3</sub>), and (53) (53<sub>1</sub> to 53<sub>3</sub>), in which the interest corresponding to the number of installments (N = 12, 24, 36) for each Credit/loan Company A, B, C are stored, along with the work area (40), are provided.

In the interest storage area (51) (51<sub>1</sub> to 51<sub>3</sub>) for Credit/loan Company A, the interest for 12 payments, the interest for 24 payments, and the interest for 36 payments are stored at each number of installments (N = 12, 24, 36). In the same manner, the interest for 12 payments, the interest for 24 payments, and the interest for 36 payments for each credit loan company /11 are respectively stored at each number of installments (N=12, 24, 36) in the interest storage area (52) (52<sub>1</sub> to 52<sub>3</sub>) for Credit/loan Company B and the interest storage area (53) (53<sub>1</sub> to 53<sub>3</sub>) for Credit/loan Company C.

Also, in Figure 7, the number-of-times key (48) in Application Example 1 is omitted; in place of that, the credit/loan company designation keys (54) of "A," "B," "C," which input the credit/loan company designation information are provided for designating a particular credit/loan company from among the credit/loan companies A to C.

Also, in Figure 8(A), at (ST6) a determination is made as to whether the credit/loan company designation key (54) has been pushed, and taking as a condition the fact that the credit/loan company designation key (54) has been pushed, it advances through (ST13) and (ST14) to (ST15), and the interest corresponding to the number of installments from among the interest storage areas (51 to 53) which corresponds to the credit/loan company that was inputted by the credit/loan company designation key (54) is selected; this is stored into the applied-interest storage area (25). Continuing, it advances to (ST15-1) and calculates the number of bonus payments from the number of installments of the number-of-installments storage area (22). In other words, if the number of payments is "12," it calculates ".2", if the number of installments is "24," it calculates "4," and if the number of installments is "36," it calculates "6," respectively. Continuing, it advances to (ST15-2), and changes to the process that stores the number-of-bonus-payments that was calculated to the number of bonus payments storage area (31).

Also, in Figure 8(B), the conditions are taken to be that the subtotal key (45) was pushed at (ST3) of Figure 8(A), it advances to (ST61, 62), and determinations are made as to whether the

Also, in the above-mentioned Application Examples 1 and 2, the number of installments were set to the three types 12, 24, 36, and the interest [rates] corresponding to these were stored in the interest storage areas (26, 27, 28, 51, to 51, 52, to 52, 53, 53, to 53), respectively, but the number of installments can be two or more than four types.

Also, in the above-mentioned Application Examples 1 and 2, the installment payment period was made one month, but it is not limited to this and can be arbitrarily set to any period.

Also, in the above-mentioned Application Examples 1 and 2, the printer (18) was used as a means for outputting the installment-payment information, but it can also be made so as to use a display device (16). For the information that is outputted, it is not necessary that it be all of the contents that were presented in the above-mentioned application examples, and it can be made so as to output at least one of the total-payment amount and the installment amount per month. This is because one of these is the information the customer desires most.

Also, in the above-mentioned Application Examples 1 and 2, an explanation was given in regard to an example that used an ECR, but it is not especially limited to an ECR, and can also be constructed as equipment that calculates and outputs only the installment-payment information.

#### Effects of the invention

According to the invention recorded in Claim 1, if the merchandise amount and the

number of installments are inputted, the merchandise amount becomes the installment-object amount, the installment amount for each time and the payment amount are determined, and at least one of these is outputted. Therefore, at least one of the installment amount for each time and the payment amount can be quickly simply and quickly shown to the customer. This fact, along with being able to reduce the burden for the salesperson, can also quickly obtain the response for the customer, and contributes to an improvement of service.

Also, according to the invention recorded in Claim 2, if the merchandise amount, the number of installments, and the down-payment amount are inputted, the amount from which the down-payment is subtracted from the merchandise amount is used as the installment-object amount, the installment amount for each time and the total-payment amount are determined, and at least one of these is outputted. Therefore, because the customer can know at least one of the installment amount for each time and the total-payment amount in the case of remitting a down-payment amount, information that meets the requirements of the customer can be offered.

Also, according to the invention recorded in Claim 3, if the merchandise amount, the number of installments, and the bonus-payment total amount are inputted, the merchandise amount is used as the installment-object amount, the installment amount is found for each time by excepting the bonus-payment total amount, and at least one of the installment amount payment amount for each time and the payment amount is outputted. Therefore, the customer can

know at least one of the installment amount for each time including the bonus-payment total amount and the payment amount, and information that meets the requirements of the customer can be offered.

Also, according to the invention recorded in Claim 4, if the merchandise amount, the number of installments, and the credit/loan company designation information are inputted, the merchandise amount is used as the installment-object amount, and the installment amount for each time and the payment amount are found according to the interest corresponding to that credit/loan company designation information and the number of installments, and at least one of these is outputted. Therefore, because the customer can be simply and quickly shown at least one of the installment amount for each time and the payment amount with the desired credit/loan company and number of installments, information that meets the requirements of the customer can be offered. /13

#### Brief description of the figures

Figures 1 to 5 are drawings showing Application Example 1 of this invention, Figure 1 is a system overall block diagram, Figure 2 is a diagram showing the contents of the RAM, Figure 3 is a diagram showing the keyboard, Figure 4 is a diagram showing a receipt sample, and Figures 5(A), (B), (C), (D), and (E) are flow charts.

Figures 6 to 8 are diagrams showing Application Example 2 of this invention, Figure 6 is a diagram showing the contents of the RAM, Figure 7 is a diagram showing a keyboard, and Figures 8(A) and (B) are flow charts.

- 11,13. CPU and ROM (control means)
- 14. RAM (memory means)
- 15. Keyboard (input means)
- 18. Printer (output means)
- 21. Merchandise-amount storage area
- 22. Number-of-installments storage area
- 23. Bonus-payment total amount storage area
- 24. Down-payment amount storage area
- 26, 27, 28, 51, 52, 53. Interest storage areas

//Insert Figures 1 to 8//

Figure 1

Key: 11, 13 CPU and ROM (control means)  
14 RAM (memory means)  
15 Keyboard (input means)  
16 Display device  
18 Printer (output means)  
21 Merchandise-amount storage area  
22 Number-of-installments storage area  
23 Bonus-payment total amount storage area  
24 Down-payment amount storage area  
26, 27, 28, 51, 52, 53. Interest storage area

Figure 2

Key: 21 Merchandise-amount storage area  
22 Number-of-installments storage area  
23 Bonus-payment total amount storage area  
24 Down-payment amount storage area  
25 Applied interest storage area  
26 Interest storage area for number of installments  
(N = 12)  
27 Interest storage area for number of installments  
(N = 24)  
28 Interest storage area for number of installments  
(N = 36)  
29 Installments object amount storage area  
30 Payment-amount storage area  
31 Number of bonus payments storage area  
32 Bonus-payment total amount storage area  
33 Equal installment-object amount storage area  
34 Installment amount per month storage area  
35 Total-payment amount storage area  
36 Installment key flag  
37 Number-of-times key flag  
38 Down-payment amount key flag  
39 Down payment key flag

Figure 3

Key:	1	Register
	2	Check
	3	Accumulate
	4	Total
	5	Illegible
	45	Subtotal Key
	46	Tended/current total key
	47	Installment
	48	Number of times
	49	Bonus
	50	Down payment

Figure 4

Key: 1 Down payment  
2 Every month  
3 Bonus time  
4 Total-payment amount  
5 Times



Figure 5 (A)

Key: 1 Start  
2 Error  
3 End  
ST1 Total mode?  
ST2 Other mode processing  
ST3 Subtotal key?  
ST4 Register keys?  
ST5 Installment key?  
ST6 Number of times key?  
ST7 Bonus key?  
ST8 Down payment Key?  
ST11 Store the numeric data (merchandise amount) to the merchandise-amount storage area  
ST12 Installment key flag 6 1  
ST13 Is it any one of the numeric data 12, 24, 36?  
ST14 Store numeric data (number of installments) to the number-of-installments storage area  
ST15 Store the interest corresponding to the number of installments in the applied interest storage area  
ST16 Number of times key flag 6 1

- ST17 Store the numeric data (bonus-payment total amount) in the bonus-payment total amount storage area
- ST18 Bonus key flag 6 1
- ST19 Store the numeric data (down-payment amount) in the down-payment amount storage area
- ST20 Down-payment key flag 6 1
- ST21 Installment key flag 1?
- ST22 Number of times key flag 1?
- ST23 Bonus key flag 1?
- ST24 Down-payment key flag 1?
- ST25 Down-payment key flag 1?

Figure 5(B)

Key: ST31 (Merchandise-amount storage area) - (down-payment amount storage area) 6 (installment-object amount storage area)

- ST32 (Installment-object amount storage area) (applied interest storage area) 6 (payment amount storage area)
- ST33 Number of installments N = 12?
- ST34 Number of installments N = 24?
- ST35 Number of installments N = 36?
- ST36 2 6 (number of bonus payments storage area)
- ST37 (Bonus-payment total amount storage area) X (number of bonus payments storage area) 6 (bonus payments total amount storage area)
- ST38 4 6 (number of bonus payments storage area)
- ST39 (Bonus-payment total amount storage area) (number of bonus payments storage area) 6 (bonus payments total amount storage area)
- ST40 6 6 (number of bonus payments storage area)
- ST41 (Bonus-payment total amount storage area) (number of bonus payments storage area) 6 (bonus payments total amount storage area)
- ST42 (Payment amount storage area) - (total bonus payments amount storage area) 6 (equal installment-object amount storage area)
- ST43 (Equal-installment-object amount storage area) ) (number-of-installments storage area) 6 (installment amount for one month storage area)
- ST44 (Down-payment amount storage area) + (payment amount storage area) 6 (total-payment amount storage area)
- ST45 Print the respective contents of (down-payment amount storage area) (installment amount per month storage area) (number-of-installments storage area) (bonus-payment total amount storage area) (number of bonus payments storage area) (total-payment amount storage area)
- ST46 Clear areas and flags except for the interest amount corresponding to the number-of-installments storage area
- 50. End

Figure 5(C)

Key: ST51 (Merchandise-amount storage area) 6 (installment-object  
amount storage area)

Figure 5(D)

Key: ST52 (Merchandise-amount storage area) (down-payment amount storage area) 6 (installment-object amount storage area)  
ST53 (Installment object storage area) (applied interest for each area)  
6 (equal-installment-object amount storage area)  
6 (payment amount storage area)

Figure 5(E)

Key: ST54 (Merchandise-amount storage area) 6 (installment-object amount storage area)  
ST55 (Installment-object amount storage area) X (applied interest storage area)  
6 (equal-installment-object amount storage area)  
6 (total-payment amount storage area)  
ST56 (Equal installment-object amount storage area) )  
(number-of-installments storage area) 6 (installment amount per month storage area)





Figure 6

Key: 21 Merchandise-amount storage area  
22 Number-of-installments storage area  
23 Bonus-payment total amount storage area  
24 Down-payment amount storage area  
25 Applied interest storage area  
26 Interest storage area for number of installments  
(N = 12)  
27 Interest storage area for number of installments  
(N = 24)  
28 Interest storage area for number of installments  
(N = 36)  
30 Payment-amount storage area  
31 Number of bonus-payments storage area  
32 Bonus-payments total amount storage area  
34 Installment amount per month storage area  
35 Total-payment amount storage area  
36 Installment key flag  
37 Number of times key flag  
38 Bonus key flag  
39 Down-payment key flag  
40 Work area

Figure 7

1. Register
2. Check
3. Accumulate
4. Total
5. Illegible
- 45 Subtotal key
- 46 Tended/current total key
- 47 Installment
- 49 Bonus
- 50 Down payment

Figure 8(A)

Key: 1 Start  
2 Error  
3 End  
ST1 Total mode?  
ST2 Other mode processing  
ST3 Subtotal key?  
ST4 Register keys?  
ST5 Installment key?  
ST6 Number-of-times key?  
ST7 Bonus key?  
ST8 Down payment key?  
ST11 Store the numeric data (merchandise amount) into the merchandise-amount storage area  
ST12 Installment key flag 6 1  
ST13 Is it any one of the numeric data 12, 24, 36?  
ST14 Store the numeric data (number of installments) into the number-of-installments storage area  
ST15 Store the interest corresponding to the number of installments in the applied interest storage area  
ST15-1 Calculate number of bonus payments  
ST15-2 [Store] number of bonus payments in number of bonus-payments storage area  
ST16 Number of times key flag 6 1  
ST17 Store the numeric data (bonus-payment total amount) in the bonus-payment total amount storage area  
ST18 Bonus key flag 6 1  
ST19 Store the numeric data (down-payment amount) in the down-payment amount storage area  
ST20 Down payment key flag 6 1

Figure 8(B)

Key: 1 Error  
2 End

ST61 Installment key flag 1?  
ST62 Number-of-times key flag 1?  
ST63 (Merchandise-amount storage area) 6 (work area)  
ST64 Down-payment amount key flag 1?  
ST65 (Work area) - (down-payment amount storage area) 6  
(work area)  
ST66 (Work area) (applied-interest storage area)  
6 (payment amount storage area)  
6 (work area)  
ST67 Bonus key flag 1?  
ST68 (Bonus-payment total amount storage area) (number-of-bonus-payments storage  
area) 6 (bonus-payments total amount storage area)  
ST69 (Work area) - (bonus-payments total amount storage  
area) 6 work area  
ST70 (Work area) (number-of-installments storage area) 6  
installment amount per month storage area)  
ST71 (Down-payment amount storage area) + (payment amount  
storage area) 6 (total-payment amount storage area)  
ST72 Print the contents of (Down-payment amount storage  
area)  
(installment amount per month storage area)  
(number-of-installments storage area)  
(bonus-payment total amount storage area)  
(number-of-bonus payments storage area)  
(total-payment amount storage area), respectively  
ST73 Clear areas and flags except for the interest storage  
area

installment key flag (36) and the number-of-times key flag (37) are "1." In the event flags (36, 37) are not "1," it is processed as an error. If both flags (36, 37) are "1," it advances to (ST63), and after the contents (merchandise amount) of the merchandise-amount storage area (21) are transferred to the work area (40), it advances to (ST64), and a determination is made as to whether the down payment key flag (39) is "1." If the down payment Key flag (39) is "1," it advances to (ST65), it finds the installment-object amount by subtracting the content (down-payment amount) of the down-payment amount storage area (24) from the content (merchandise amount) of the work area (40); afterwards, this installment-object amount is stored into the work area (40), then it advances to (ST66). In the event the down payment key flag (39) is not "1," it advances to (ST66) without conducting the process of (ST65).

At (ST66), the payment amount is determined by multiplying the contents (installment-object amounts) of the work area (40) by the contents (the interest corresponding to the credit/loan company designation information and the number of installments) of the applied-interest storage area (25); after that payment amount is stored into the payment amount storage area (30) and the work area (40), it advances to (ST67), and a determination is made as to whether the bonus key flag (38) is "1."

Here, if the bonus key flag (38) is "1," it advances to (ST68), and determines the bonus-payment total amount by multiplying the contents (bonus-payment total amount) of the bonus-

payment total amount storage area (23) by the contents (number-of-bonus payments) of the number of bonus payments storage area (31); that bonus-payment total amount is stored into the bonus-payment total amount storage area (32) then it advances to ST69; continuing, the equal installment-object amount is found by subtracting the contents (bonus-payment total amount) of the bonus-payment total amount storage area (32) from the contents (payment amount) of the work area (40); after that equal installment-object amount is stored into the work area (40), it advances to (ST70). In the event the bonus key flag (38) is not "1," it advances to (ST70) without conducting the processes of (ST68, 69).

At (ST70), it finds the installment amount per month by dividing the contents (equal installment-object amount) of the work area (40) by the contents (number of installments) of the number-of-installments storage area (22); after that installment amount per month is stored in the installment-amount-per-month storage area (34), it conducts the processes of (ST71, 72, 73). The processes of (ST71, 72, 73) are the same as the processes of (ST44, 45, 46) in Application

Example 1.

Therefore, after the number of installments is inputted by the register keys (42), if any of the credit/loan company designation keys (4) corresponding to a credit/loan company that the customer designated is pushed, the interest is selected corresponding to the number of installments inputted by the register keys (42) from among the interest storage areas (51 to 53) of

the company designation keys (54) for whichever of the credit/loan companies the customer has designated; along with being stored into the applied-interest storage area (25), the number of bonus payments is calculated from that number of installments, and stored to the number of bonus payments storage area (31).

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Afterwards, if the subtotal key (45) is pushed, the installment amount per month and the payment amount can be found based on the interest stored in the applied-interest storage area (25). In this case also, after any one of the credit/loan company designation keys (54) is pushed, if the bonus-payment total amount and the down-payment amount are inputted, an amount from which the down-payment amount is subtracted from the merchandise amount is used as the installment-object amount, and the number of bonus payments, the bonus-payment total amount, the installment amount per month, and the total-payment amount are found, then printed out. Therefore, along with the customer being able to ascertain the installment amount per month and the payment amount at the interest rate of the desired credit/loan company, installment-payment information that includes the remittance of the down payment and the payment requirement at bonus time can be offered.

In the above-mentioned Application Example 2, the three companies A to C were used as the credit/loan companies, but the number of credit/loan companies can be two, or more than four.